

WHAT IS CLAIMED IS:

1. A universal multi-media gateway, comprising:

a media processor for receiving a media signal;

a first media access control (MAC) layer coupled to the media processor;

5 a switch device having three nodes, any two of the nodes capable to be selectively coupled, the first node of the switch device being coupled to the first MAC layer;

a second MAC layer coupled to the second node of the switch device;

a wireless transmitter coupled to the second MAC layer; and

10 a physical layer coupled to the third node of the switch device and the physical layer being selectively coupled to an external network,

wherein while the switch device is in a first switching status, the second node and the third node are electrically coupled and the second MAC layer is coupled to the physical layer so that data packets from the external network can be transmitted  
15 to the wireless transmitter via the physical layer and the second MAC layer,

wherein while the switch device is in a second switching status, the first node

and the second node are electrically coupled and the first MAC layer is coupled to the second MAC layer so that the media signals can be transmitted to the wireless transmitter via the first and the second MAC layers,

wherein while the switch device is in a third switching status, the first node and  
5 the third node are electrically coupled and the first MAC layer is coupled to the physical layer so that the media signals can be transmitted to the external network via the first MAC layer and the physical layer.

2. The universal multi-media gateway according to claim 1, wherein the media  
signals comprise an audio signal, a video signal, a television signal, or a frequency  
10 modulation (FM) signal.

3. The universal multi-media gateway according to claim 1, wherein the wireless transmitter is a wireless local area network (LAN) transmitter.

4. The universal multi-media gateway according to claim 1, wherein the switch device is a programmable switch or a mechanical switch.

15 5. A universal multi-media gateway, comprising:

a media processor for receiving a media signal;

a first MAC layer coupled to the media processor;

a switch device coupled to the first MAC layer;

a second MAC layer coupled to the switch device;

a wireless transmitter coupled to the second MAC layer;

a physical layer coupled to the switch device and selectively coupled to an

5 external network;

wherein by switching the switch device to different switching statuses, the universal multi-media gateway can substitute for a wireless LAN access point, a wireless media sharing device or a media server.

6. The universal multi-media gateway according to claim 5, wherein the second  
10 MAC layer is coupled to the physical layer so that the data packets from the external network can be transmitted to the wireless transmitter via the physical layer and the second MAC layer while the switch device is in a first switching status.

7. The universal multi-media gateway according to claim 5, wherein the first  
MAC layer is coupled to the second MAC layer so that the media signals can be  
15 transmitted to the wireless transmitter via the first and the second MAC layers while the switch device is in a second switching status.

8. The universal multi-media gateway according to claim 5, wherein the first  
MAC layer is coupled to the physical layer so that the media signals can be

transmitted to the external network via the first MAC layer and the physical layer while the switch device is in a third switching status.

9. The universal multi-media gateway according to claim 5, wherein the media signals comprise an audio signal, a video signal, a television signal or a FM signal.

5        10. The universal multi-media gateway according to claim 5, wherein the wireless transmitter is a wireless LAN transmitter.

11. The universal multi-media gateway according to claim 5, wherein the switch device is a programmable switch or a mechanical switch.

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